NU-WRF Version 1.0 Software Definition

Revision 1.08 for July 2, 2010

Overview

Candidate Release Date: June 23, 2010
Final Release Date: August 2, 2010

Summary: NU-WRF 1.0 consists of a software package of coupled components, runnable use case examples with data sets that exercise these components, and documentation on building the software and running the use cases.

Software Components Supported

The NU-WRF 1.0 package will contain the following codes/couplings:

- WRF 3.1.1
- *Related WRF 3.1.1 packages:* WPP, WPS, MET, ARWPost, RIP
- Goddard microphysics and Goddard radiation, coupled internally
- LIS, coupled internally
- Severe convection diagnostics
- *Data utilities:* merra2wrf/geos2wrf, gocart2wrf, sst2wrf

Use Cases Supported

The NU-WRF 1.0 package will contain the following use case examples. The use cases include WRF config files and datasets. General instructions are contained on Modeling Guru:

- 05 - California snow (00Z 12/30/05 - 00Z 01/01/06)
- 06 - Hurricane Wilma 2005
- 15 - Typhoon Morakot 2009
- 08 - C3VP (00Z 1/20 - 00Z 1/23 2007)
- 09 - MSFC: Real-time NSSL: 10 April 2009 (tornado/large hail outbreak, SE U.S.)
- 11 - MSFC: Real-time NSSL: 28 March 2007 (tornado outbreak)
- 12 - Very dry/mostly clear sky with deep PBL growth (14 July 2006)

Datasets included with the release include GRIB files, processed GEOS and MERRA datasets and customized WPS TBL, as appropriate. A common boundary conditions file for the use cases (e.g. GFS data) could be developed and used as appropriate.

Note: Use case numbering corresponds to numbering in the shared project folder on discover. See: /discover/nobackup/projects/nu-wrf/cases/README.TXT

Note: For inclusion in the release, the use cases should (1) have all code component dependencies completed or working reasonably, (2) have contributed their input configurations and datasets to the shared project area, (3) be executable by other team members, (4) have a regression test established to exercise aspects about the case/code.

Documentation

The NU-WRF 1.0 package contains documentation for the following:

- Accessing Source Code and Data
- Building the Software
- Running the Cases and Utilities

Schedule

- **May 27, 2010** - Initial NU-WRF 1.0 Software Definition accepted by team. Begin capturing codes and use cases that are done.
- **June 21, 2010** - All codes integrated into the repository and all use case inputs captured to the shared folder.
- **June 30, 2010** - All regression tests completed. Supports build all option(?)
- **July 2, 2010** - NU-WRF 1.0 released. Documentation on accessing the software and running the use cases made available. Build made available on shared folder on discover as an official release.

Software and Use Case Status Chart

Component	Contacts	Status
Related WRF 3.1.1 packages: WPP, WPS, MET, ARWPost, RIP	Rob Burns, Rahman Syed	NA
Data utilities: merra2wrf/ geos2wrf, gocart2wrf, sst2wrf	Eric Kemp, Phil Hayes	Alpha Only (no use case validation)
LIS, coupled internally	Sujay Kumar, Jim Geiger	X (Verified by case 12)
Goddard microphysics and Goddard radiation, coupled internally	Roger Shi	X (Verified by case 05, 06, 08, 15)
Severe convection diagnostics	Jon Case	No (Verified by case 09, 11)
Use Case	**Contacts**	**Status**
05 - California snow (00Z 12/ 30/05 - 00Z 01/01/06)	Mei Han	X
06 - Hurricane Wilma 2005	Roger Shi, Scott Braun, Aaron Pratt	X
08 - C3VP (00Z 1/20 - 00Z 1/23 2007)	Roger Shi	Failing (Has issues with latest datasets)
09 - MSFC: Real-time NSSL: 10 April 2009 (tornado/large hail outbreak, SE U.S.)	Jon Case	Waiting for Verification (May split in 2)
11 - MSFC: Real-time NSSL: 28 March 2007 (tornado outbreak)	Jon Case	Waiting for Verification
12 - Very dry/mostly clear sky with deep PBL growth (14 July 2006)	Joseph Santanello, Sujay Kumar	X
15 - Typhoon Morakot 2009	Roger Shi, Scott Braun, Aaron Pratt	Waiting for Verification